1: Conzemius M-4, 5 (1921) 1932
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a descendant of the Miskito royal family.[8] (Heath, a: 49; Lehmann, b: 715–716; Joyce: 8–9.) The present writer has, however, little faith in its exactitude, and such is also the opinion of the various older Indians he consulted about it.[9]

In former days the Miskito were called Kiribi [10] and lived on the narrow isthmus between Lake Nicaragua and the Pacific Ocean, a territory which the Nicarao occupied at the arrival of the Spaniards.

Late in the tenth century this country was invaded by a tribe of immigrants from the north (probably the Nicarao) and eventually, after a long struggle, the Miskito were compelled to leave their old home and retreat to the eastern shore of Lake Nicaragua. Here they resided for nearly a century, but finally, again under foreign pressure, this time exercised probably by the Sumu or Matagalpa, they migrated to the Atlantic shore. Believing that they had now found a safe home, they gave themselves the name of *Dis-kitwas-nani*, "they who can not be dislodged," which was corrupted into Miskito.

At the time of their migration to the Atlantic their leader was a sort of culture hero, named *Wakna*, whose son *Lakpatara* "Evening Star" conquered the whole coast from Honduras to Costa Rica. While Wakna was still alive disputes arose among the Miskito chiefs. A rebellion, headed by *Wialandin*,[11] was defeated; its leader was imprisoned, and 300 of his partisans were executed.

PHYSIQUE: PERSONAL CHARACTERISTICS

GENERAL.—The Sumu differ naturally in many points in physique from the Negro-mixed Miskito, but there are also certain slight dissimilarities between them and the pure Miskito or *Tāwira*. The latter are, as a rule, well built and of middle height, whereas the Sumu are rather thickset and low in stature. According to Schultz (67) the Sumu from Rio Prinsapolca measure from 1.427 m. to 1.68 m. with 1.5816 m. as an average.[12]

Both tribes are sturdy, heavy muscled, proportionally broad shouldered, and have deep chests. The arms are well developed in comparison to the legs. As both of these tribes are essentially canoe men, passing most of their time in a cramped position in small boats, they lack the well-developed leg muscles of the "civilized" Indians of the interior.

COLOR.—The Sumu are of fairer complexion than all the other Indian tribes of this part of Central America, not excluding the so-called pure Miskito or Tāwira.

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[8] The father of Mr. Pereira was a Mexican; his mother was the daughter of a Scotchman named Haly and an Indian woman of the Miskito royal family.

[9] Pereira, besides, denies having given out this version, and claims to be in possession of the correct account.

[10] This name has an alluring similarity to Corobici, under which name the early Spanish historians of Central America mention an Indian tribe which lived formerly in northwestern Costa Rica to the south of Lake Nicaragua.

[11] Compare *waila* "enemy" in the Miskito language.

[12] The anthropological measurements by Schultz, quoted in this study, were taken on 12 Sumu from Rio Prinsapolca and 25 Rama from Rama Key, all males.

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142 SACRAL PIGMENT SPOT.—The "Oriental mark" (Mongolen-Fleck) is met with among all these tribes during early infancy. It consists of a bluish-gray spot found in the sacral region, which gradually disappears in adult life. The Indians pay no attention to it and most of them do not even know of its existence.

● 141 CEPHALIC INDEX.—The Sumu are on the average hyperbrachycephalic, that is, they have exceedingly broad heads. The cephalic index, which is obtained by dividing the breadth of the head by its length and multiplying the result by 100, was found to be 89.48 according to Schultz (71–72). This figure is surpassed by few American tribes.[11] It may be the result of artificial deformation, since this practice was formerly current among the Sumu.

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MORPHOLOGICAL FACE INDEX.—The Sumu are on the average mesoprosopic, that is, they have proportionally narrow faces; Schultz (72) found a face index of 84.82 among this tribe living on Rio Prinsapolca, while among the Rama the figure was higher (85.20).

NOSE.—The nose of both Miskito and Sumu is relatively large; the profile is slightly convex among most of pure-blooded Indians. The nasal index is, on the average, very low among the Sumu, the range of variation extending from 66.0 to 83.3, with 73.76 as an average (Schultz: 74). This tribe is therefore mesorrhinic; the Rama, however, have even a narrower nose and are classed as leptorrhinic, the index ranging from 57.6 to 75.9 with an average of 65.96, a rather unusually low figure for American Indians.

EARS.—The Indians of the Mosquito Coast have relatively narrow ears, the physiognomic ear index averaging 54.09 among the Sumu; those of the Rama are still narrower with an average ear index of only 52.64 (Schultz: 75).

142 EYES.—The large brilliant eyes are so dark brown that they appear black to the casual observer. In both Miskito and Sumu they are horizontal, but those of their northern neighbors, the Paya, have a slight Mongoloid tilt.

LIPS AND CHIN.—The lips are full, but not thick, among the Sumu and the pure-blooded Miskito, while the chin is generally "receding"; a prominent chin occurs rarely.

HANDS AND FEET.—The hands are small as compared with Whites and Negroes. In most individuals the annularis is slightly longer than the index finger; the reverse is apparently never the case. The little finger is relatively very small and stands inside of the direction of the ulnar edge of the palm, as if it had been crowded toward the fourth finger. The smallness and position of this finger is not an inherited racial character, but the direct result of the narrow paddle

[11] Boas, quoted by R. Martin (Lehrbuch der Anthropologie, Jena, 1914) found an average cephalic index in Wichita Indians (Oklahoma) of both sexes of 89.5 and one of 89.7 in male California Indians.

3: Pijoan D-5 (ca. 1945) 1946
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are dying out rapidly, which may account for the lower figure now given. The Rama tribe, of about 200 members, living along the lagoons near Bluefields, has become a sort of slum population; its existence on the edge of the rough seaport village subjects it to the whims and volition of all and sundry. From the Río Tinto northward live the Black Caribs, descendants of the aborigines of St. Vincent Island. In and about Bluefields, Pearl Lagoon, San Juan del Norte, and on the islands, the inhabitants are largely mulattoes; Negroes as well as mulattoes are also found in the coastal towns.

MORPHOLOGICAL CHARACTERISTICS OF MISKITO AND SUMU

The Miskito Indian is generally well built, of middle height whereas the Sumu Indian is rather thickset and of lower stature. Both are proportionally broad shouldered, have beep chests and are heavy muscled. Schultz[31] found the average measure of the adult Sumu and Rama to be 1.5816 m. It is also obvious to any observer that the arm and chest muscles are developed somewhat out of proportion to the leg muscles. This may be due to the fact that these people are essentially canoe (pipante) folk whose chief method of travel consists of river boating. In fact, most of their enterprise is carried out by the use of a boat and the use of arm and torso muscles any exceed those of the lower extremities.

In our studies at Waspam and Saulpuca the weights and heights were noted in a series of individuals with reference to their age. It is apparent that diet plays a role in development[32] but since it will be shown later that the nutrition of these people is adequate in the light of present day criteria, the figures reveal presumably the inherent constitutional morphology of surface area. And since the changes in height and weight vary with the age of the individual it is important to take this factor into account.

It is to be noted that the figures are averages and do not reveal variation. Since the major part of growth occurs between birth and twenty years of age[33] the values given represent the peak of surface area development and the initial phases of further weight gain. However, measurements are no better than their definition and the indivi-

[32] Palmer, C. E. Growth and the economic depression. Pub. Health Reports. 1934, *48*, 1277-1292.

[33] Krogman, W. M. The Growth of Man. Tabulae Biologicae. 1941-42, *20*, 1-967. Junk, Den Haag, Nederlands (delayed in press because of war).

[34] Krogman, W. M. Human Growth. Ciba Symposia. 1943, *5*, 1458-1485.

3: Pijoan D-5 (ca. 1945) 1946
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dual doing the measuring and much over-emphasis has been placed on this subject.[24] Thus the data are used only as an approximate impression and categorically support clinical observation and conclusions.

Average weight and height of Miskito men and women relative to their age

All years	Sex	152	158	160	165	170	175
			Height (cms)				
			Weight (kilo)				
18-20	M	55.1 (10)*	58 (8)	61 (13)	—	—	64.2 (6)
20-21	M	58.6 (8)	60 (14)	62 (21)	64.6 (6)	65 (6)	64.0 (4)
21-24	M	59.2 (5)	—	61.8 (4)	64.6 (9)	64 (6)	65.0 (4)
25-32	M	66.0 (9)	67 (13)	71.0 (19)	75 (19)	77 (13)	76.0 (2)
18-20	F	60.2 (13)	63 (14)	65.0 (17)	65 (3)	—	—
20-21	F	62.4 (21)	65 (20)	65 (19)	68 (7)	—	—
25-32	F	70.0 (30)	72 (19)	73 (13)	75 (8)	—	—

* Numbers in brackets indicate number of people examined of the same age.

The averages may be further computed for the age groups in question and at 19 years of age may allow for the following comparison:

Comparison of nineteen-year-old subjects
(Height in cms)

Sex	*Present Survey* Miskito Indian	*American* Chicago	*Taken from Krogman*[24] *American* Negro	*German*	*Japanese*
M	162	176	172	174	158
F	160	164	160	165	146

It can be seen from these data the women grow to be about as tall as the men but from the previous table they also tend to become more obese or add more weight than the men. They appear to be generally of shorter statute than those of us who visited the area and this notion is supported by measurements. It must be noted, however, that these people (Waspam, Saulpuca) were upper river folk and cannot be correctly compared with the data obtained by Schultz[25] who studied twelve Sumu Indians from Río Prinsapolca and twenty five Rama Indians from Rama Key. There appears to be, furthermore, slight differences in weight and height within the tribe. These variations are more pronounced in coastal towns, where the socio-economic level is poor by comparison

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comparison. The dietary in urban areas of coastal ports is predominantly one of imported and home grown cereal grains, wereas the river Indians consume a greater quantity of meats and fresh fruits. On the basis of the investigation by Roberts[35] it may be presumed that the variation in diet may account for the impairment of growth of coastal Indians. In specific physical anthropology there is sufficient reference elsewhere (vide Schultz[36]).

The Miskito Indians have an abundance of hair growth extending low over the forehead; it is scarce on other parts of the body. The hair is commonly black and very straight, although several Indians were noted who had reddishbrown (a metallic auburn) shade of hair. Gray and white hair rare and beard growth is very scarce. Chest and pubic hair is absent among pure Indians.

Although there are no accurate figures dealing with longevity the impression gained was that once an Indian lived to be over twenty years of age he had good chances for old age. Conzemius[1] in 1922 met a number of Indians who were young children during the volcanic eruption of Coseguina on the bay of Fonseca in 1835. Our survey revealed a number of Indians who remembered missionaries who had been in the territory sixty or seventy years ago. The Indians themselves informed us that many die between the ages of fifty and sixty years of age, with the chief cause of death being the fever (malaria). As will be shown, infectious disease takes a heavy toll of life during infancy and in early senescence. It is to be noted that the situation may change and the death rate in later life may increase. In former days sickly and deformed children were either buried alive or starved to death. Only the strong and healthy were allowed to grow up. Today there is no such control; Indians with deformities will secrete them or bandage the part involved; tolerance to diseased people has increased.

GENERAL CUSTOMS OF THE MISKITO

Today the men wear loose cotton shirts *(prak)* and trousers *(transis)*; the shirt tails are usually not tucked in. The older boys wear a similar garment but commonly among youngsters the dress is chiefly a loin or breech cloth *(palpura)* or nothing at all. Many of the women wear dresses *(prak)* although some of them and the girls wear a piece of cloth *(kwaluntara)* which is wrapped about the hips and extends

[35] Roberts, L. J.; Blair, R.; Lenning, B., and Scott, M. Effect of a milk supplement on the physical status of institutional children: I. Growth in height and weight (pp. 287-300). II. Ossification of the bones of the wrist (pp. 494-509). III. Progress of dental caries (pp. 805-823). Amer. Jour. Dis. Children, 1938, *56*.